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February 1, 2019
Dr Shane Worner
International Organization of Securities Commissions (IOSCO)
Calle Oquendo 12
28006 Madrid
Spain

Submitted via email to: consultation-08-2018@iosco.org.

RE: Public Comment on IOSCO Report: Leverage

Dear Dr Worner,

BlackRock¹ is pleased to have the opportunity to respond to IOSCO's Report on Leverage.

BlackRock supports a regulatory regime that increases transparency, protects investors, and facilitates responsible growth of capital markets while preserving consumer choice and assessing benefits versus implementation costs.

We welcome the opportunity to comment on the issues raised by this Report and will continue to contribute to the thinking of IOSCO on any issues that may assist in the final outcome.

We welcome further discussion on any of the points that we have raised.

Yours faithfully,

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¹ BlackRock is one of the world's leading asset management firms. We manage assets on behalf of institutional and individual clients worldwide, across equity, fixed income, liquidity, real estate, alternatives, and multi-asset strategies. Our client base includes pension plans, endowments, foundations, charities, official institutions, insurers and other financial institutions, as well as individuals around the world.

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Executive summary

Purpose of the Report

This Report from IOSCO represents a welcome response to the FSB's recommendations to address structural vulnerabilities from asset management activities². BlackRock appreciates the level of engagement and consultation from IOSCO members around the globe on this Report.

We agree that collecting consistent and comparable data on leverage is vital to the prudent management and oversight of investment funds. The lack of consistent and accessible data is an impediment to assessing potential risks associated with funds' use of leverage. The proliferation of templates, formats, and definitions, as well as issues associated with data confidentiality and data sharing, reduces the ability of regulators to share data on a cross-border basis and limits their ability to compare information with each other.

We support collecting data about leverage in funds for risk monitoring purposes using consistent and comparable measures of leverage. We are highly supportive of efforts to harmonize the definition of leverage for the purposes of regulatory reporting to facilitate global monitoring of risks and comparisons across funds (including across fund structures). The current process leads to duplication and inconsistency in reporting by firms, as well as operational complexity, with many processes requiring manual intervention.

Assessment of the proposed methodologies

We welcome IOSCO's acknowledgement that there is an underlying tension between achieving precise leverage measures and arriving at sufficiently similar, robust metrics that can be applied in a consistent manner to wide range of funds offered in different jurisdictions. In particular, we welcome the recognition that "simple" measures of leverage, such as gross notional exposure ("GNE"), when used in isolation and at an aggregate level can be misleading. We believe that an asset class by asset class approach to reporting GNE will allow regulators to better identify strategies where derivatives use is present (e.g. where interest rate derivatives and foreign exchange instruments are used).

That said, while the proposed measures are sufficient for a more consistent approach to the measurement of derivatives use by investment funds and to identify funds for further inquiry, **they are insufficient to measure the risks presented by a fund or group of funds** because leverage, however measured, is not a perfect proxy for risk. Further, they cannot be summed to determine aggregate fund sector exposure to leverage-related risks. As the Global Association of Risk Professionals ("GARP") aptly put it in their September 2016 letter to the FSB:

"Individual measures of leverage, when used in isolation, lack context. Regardless of calculation method, the amount of leverage in a portfolio is often referenced in a standard way; for example "leverage of 2x" or "the portfolio is levered 2 times". The question that needs to be asked about this standard reference is 2 times what? Without context of what the baseline is,

² FSB: Policy Recommendations to Address Structural Vulnerabilities from Asset Management Activities
12 January 2017

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it is impossible to discern the implications of leverage or whether leverage results in an overly risky portfolio.”³

Step 1 Measures. We see the purpose of Step 1 measures as establishing methodologies for identifying funds that are material users of derivatives.

- **GNE**

We welcome the acknowledgement that GNE only provides a base line of derivatives use by funds without quantifying the risks associated with different types of leverage – or even differentiating which funds may be using derivatives to amplify exposure versus those that are using derivatives for hedging portfolio risks.

We also support the acknowledgment that aggregate GNE provides little information aside from the fact that the fund uses derivatives. As such, we support the proposal for funds to report GNE on an asset class by asset class basis with both long and short positions. This approach will allow regulators to assess a fund’s basic asset allocation and distinguish between exposure to different types of assets, rather than relying on a single figure of exposure from all asset classes. This will also minimize confusion caused by reliance upon single, aggregated GNE figures.

- **Adjusted GNE**

In principle, adjusted GNE is a means of normalizing GNE across certain asset classes, where the use of GNE particularly overstates potential risk – such as in the case of interest rate derivatives. While we can see certain incremental benefit in terms of smoothing out the effects of using interest rate derivatives by reducing overstated headline GNE figures, overall this measure provides little additional information to GNE reported by asset class. As we have noted in the past, we caution that reviewing aggregate GNE figures provides little information as to the risks to which a fund’s use of derivatives is associated. That said, were IOSCO going to rely on aggregate GNE figures to compare funds, aggregate adjusted GNE is clearly a better measure than a single aggregated GNE figure.

- **Net Notional Exposure (NNE)**

As we have stated in prior submissions, comprehensive measures of leverage should take into account that derivatives used for hedging do not create leverage and allow for netting of offsetting positions. To this end, the proposed NNE measure most closely approaches this standard (though it has certain important limitations). That said, we do not believe that NNE provides much incremental value over and above certain existing reporting standards, such as the AIFMD “commitment approach”. IOSCO should clarify that the “commitment approach” is sufficiently similar to NNE so as not to require additional reporting standards for those funds already complying with AIFMD. As we note below we believe it would be beneficial for IOSCO to map its recommendations against existing reporting standards.

Step 2 measures need to focus further on the interaction between leverage and risk. The consultation notes that “The aim of Step 2 is to assess funds or groups of funds already identified as potentially posing a risk to financial stability.”⁴ However, as noted

³ <http://www.fsb.org/wp-content/uploads/Global-Association-of-Risk-Professionals-GARP.pdf>

⁴ Consultation at 19.

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above, we do not believe that the Step 1 metrics would be sufficient to determine whether or not a fund could potentially pose financial stability risk since the metrics are insufficient to evaluate the risk of any given fund. Rather, Step 2 should be reserved for fund-level evaluations of the use of derivatives by funds within a given jurisdiction. As the Report focuses on measures of leverage rather than on methodologies for assessing risk it remains unclear as to what supervisory action will be by taken by securities markets regulators if a given fund moves into Step 2. As leverage is a measure of amplification of risk not an intrinsic measure of risk posed by the underlying – Step 2 should accordingly be treated as the opportunity for IOSCO to provide guidance to its members on how to conduct a risk-based analysis of funds identified at Step 2. This would avoid the automatic treatment of the funds entering Step 2 as systemically risky.

At Step 2 leverage measures should be accompanied by risk measures, such as value-at-risk (“VaR”) and stress testing. Using a risk measure like VaR alongside leverage measures is important when assessing the risk of a fund’s overall use of derivatives and leverage, particularly since a standalone leverage metric could misstate a fund’s true economic exposure and overall risk. Recognizing that funds use derivatives to achieve investment objectives, align portfolio risks to benchmark risks, or to reduce overall risk, we recommend tailoring measures according to the different ways in which a fund uses derivatives, including measuring both absolute risk and risk relative to a benchmark (where applicable).

Stress testing. Stress testing is another means of assessing downside risk that is often used as a complement to VaR. Stress testing looks at various stressed scenarios and assesses potential losses that could arise from such scenarios. To be clear, stress testing in this context is different than liquidity stress testing, as this type of stress testing relates to the mark-to-market losses a portfolio could experience during a period of market volatility, rather than on a fund’s ability to meet its redemption obligations. Stress testing addresses a valid criticism of VaR in that VaR may not provide reliable insight as to the magnitude of potential losses in the tail of the distribution.

Assessment of leverage-related risks. We recommend that the IOSCO and its members develop further the framework for assessing leveraged-related risks they are specifically concerned by (e.g., counterparty risk, risk of market losses to investors, etc.) which may potentially have a global or systemic impact. This work should consider whether this data is already captured elsewhere in other sectoral reporting frameworks (e.g. reporting relating to the use of derivatives and securities financing transactions under EMIR and SFTR in the EU) or the oversight of CCPs and broker dealers who sit on the other side of transactions with investment funds. This may lead to the conclusion that further study will then be needed to fully understand the interaction between leverage and various forms of risk in different types of investment strategies.

Furthermore, we are aware that many regulators wish to understand whether funds have sufficient liquid assets to meet calls for margin or collateral and whether funds can rehypothecate or reuse assets posted or set aside as collateral for their derivatives transactions. In a number of jurisdictions, specific fund structures such as regulated funds are subject to specific rules on collateral management which may prohibit reuse or set out conditions on how collateral is invested. National regulators will need to take all these characteristics into account as part of their Step 2 risk assessment. Many funds already provide detailed reporting of their inventories (including liquid assets) to national supervisors which could assist this process thereby avoiding the need to build out significant new reporting engines.

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Aggregation of data. Aggregating leverage across funds is inherently problematic – funds are separate legal entities with their own unique risk profiles, dealing process and client base and as such will react differently in stressed market situations. It is essential that the specific structures of each fund, such as client dealing provisions, investment profile and risk mitigation features, are looked at on an individual basis as well as considering leverage taken by other market participants and asset owners.

Improved systems for aggregating and analyzing data provided to supervisory authorities. Raw data is not the same as information, and without the necessary tools to analyze data collected, the ability for regulators to use the data to monitor and understand risks across the financial system will be limited. While individual systems that can analyze large datasets are helpful, consistent definitions and reporting requirements (data requested, time periods, and format) would best facilitate monitoring of risks across regulatory jurisdictions. We discuss this in detail in the *ViewPoint*, “Improving Transparency: The Value of Consistent Data over Fragmented Data”.⁵ We encourage IOSCO and its members to continue to prioritize harmonization of data collection efforts and the removal of barriers to data sharing.

Mapping IOSCO recommendations onto existing reporting standards rather than creating new set of reporting standards

While BlackRock is supportive of a harmonized approach to data reporting, it should not go unrecognized that fund managers around the globe have already spent significant time and resources to implement new reporting standards in the past decade. These include Form PF and Form N-PORT for US private and registered funds, respectively, to the AIFMD and UCITS reporting standards in Europe. Market participants have grown accustomed to these reporting standards and have developed systems and processes to complete them. Given the imprecise nature of “simple” and consistent measures of leverage, thought should be given as to the cost-benefit of materially rewriting existing reporting standards where they are already working well to capture the type of information suggested in this consultation. As such, we believe it is quite important for IOSCO to **allow national and regional regulators to apply a proportionate approach**. While IOSCO calls out a number of existing reporting standards, it does not fully address the extent to which existing reporting templates sufficiently meet the requirements of the proposed reporting standards, as well as the cost-benefit of collecting additional data over and above those already collected that is similar to existing reporting but may require new and different calculations.

For example, we draw IOSCO’s attention to the recent European Commission Report on the Operation of the Alternatives Investment Fund Managers Directive (AIFMD)⁶ where the Commission found that “*the AIFMD leverage provisions appear effective in the monitoring and mitigation of systemic risks as a result of leverage as an important source of counterparty risk to a credit institution or other systemically relevant institution in other Member States or to investors.*” We would therefore welcome further confirmation of which existing monitoring measures (such as those under AIFMD Annex IV in the EU or Form PF in the US) are sufficient to meet the needs of global risk monitoring of risks and comparisons across funds.

⁵ Available at: <https://www.blackrock.com/corporate/literature/whitepaper/viewpoint-improving-transparency-august-2016.pdf>

⁶ https://ec.europa.eu/info/publications/190110-aifmd-operation-report_en

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In summary we are supportive of targeted changes which align with existing reporting methodologies but also highlight the cost and complexity of redesigning existing reporting frameworks. **While the IOSCO Report refers to a number of existing reporting standards, it does not provide a clear indication of how existing reporting standards measure up against each and what the key areas for clarification or amendment are.** We believe that the process of rightsizing existing reporting standards would be assisted by a comprehensive inventory of the existing reporting standards in each IOSCO jurisdiction to determine what leverage data is already being collected⁷.

We recommend IOSCO produce a study similar to the one it created on liquidity management tools in December 2015 to catalog existing data reporting on leverage.⁸ This would then allow IOSCO to coordinate a cost-benefit analysis with national member regulators of what additional changes to existing reporting templates would be most beneficial. This may mean adjustments to existing reporting (where it already is in place) and implementing new reporting or additional data fields to existing forms to fill any gaps, recognizing that, in some cases, changes may only be possible if changes are made to primary legislation. To enhance comparability, we recommend national authorities should incorporate targeted amendment to remove duplicate or ambiguous fields and to align time sets rather than a wholesale rewrite of existing provisions, thereby recognizing the resource-intensive nature of current regulatory reporting requirements (both in terms of financial and human capital) across the industry.

Where there is separation of prudential authorities and securities regulators, we encourage greater cooperation and data exchange between counterparty prudential regulators and securities regulators to allow more meaningful data assessment, particularly of counterparty risk. We note that from a prudential perspective, the banks and central clearing counterparties (CCPs) who are counterparties to fund derivatives transactions already report positions to their supervisors.

Improve data reporting back to market participants

Finally, despite the significant amount of data reported into national regulators the data reported back to market participants on leverage and leverage-related risks is generic in nature. We encourage IOSCO and its members to develop more detailed and focused analyses from the data collected which in turn will allow market participants to respond more effectively to ongoing market trends.

⁷ In their September 2016 letter to the FSB, the Global Association of Risk Professionals (GARP) provided an in depth look at the meaning of various measures of leverage and reviewed several of the measures in each of the aforementioned categories in detail. GARP, Response to Consultative Document for Proposed Policy Recommendations to Address Structural Vulnerabilities for Asset Management Activities (Sep. 21, 2016), available at <http://www.fsb.org/wp-content/uploads/Global-Association-of-Risk-ProfessionalsGARP.pdf>.

⁸ IOSCO, Liquidity Management Tools in Collective Investment Schemes: Results from an IOSCO Committee 5 Survey to Members (Dec. 2015), available at <https://www.iosco.org/library/pubdocs/pdf/IOSCOPD517.pdf> (IOSCO Liquidity Management Survey).

Responses to individual questions

Questions on GNE

Question 1

Do respondents agree with the discussion above concerning the information that can be provided by this metric as well as its limitations?

We agree with the discussion on the pros and cons of using GNE. We particularly welcome the acknowledgment that aggregate GNE provides little information aside from the fact that the fund uses derivatives. Importantly aggregated figures of GNE are not comparable across funds and do not provide insight into risk or economic exposure. As noted below, we support the proposal for funds to report GNE on an asset class by asset class basis with both long and short positions. Breaking out GNE by underlying exposures in this way (e.g., FX, interest rate, etc.) would result in a more meaningful data set and as the Report notes allows for differentiation between low and high risk exposures. This also reflects the existing practice of a number of regulators (e.g. in Luxembourg for some fund types). This has encouraged an effective dialogue between manager and regulator with respect to the fund's basic asset allocation and facilitates meaningful discussions on the derivative exposure derived from different types of underlying assets.

This approach also moves away from reliance on a single aggregate figure of GNE in respect of all asset classes which historically has had the disadvantage of overstating derivative used for the purpose of netting or hedging.

From a cost benefit perspective we believe that most managers who currently report aggregate GNE figures will normally collect the figures on an asset by asset class basis so moving to this basis of reporting should not represent a significant change of process.

Question 2

Do respondents see merit in scoping out of step 1 assessments certain funds, such as for example, smaller funds? Please elaborate.

We believe that it is beneficial to have a broad perspective of the overall use of leverage across the fund sector even where funds have minimal use of derivatives or where leverage is capped by regulation (e.g. UCITS). A simple reporting methodology should minimize the need to develop burdensome reporting methods. We do not believe that the size of a fund by itself should be a driver for excluding funds from or including funds in the reporting methodology – a small fund can of course have high levels of leverage depending on the strategy it employs.

We do, however, recognize the fact that many national or regional regimes apply thresholds as a proportionate response to minimizing the reporting and compliance burden on managers in meeting detailed regulatory requirements, especially in the start-up phase and we recommend that this approach is maintained. A further example of a proportionate approach would be to adjust the regularity of reporting based on AUM or national leverage thresholds so that smaller funds or funds with low levels of leverage

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would file less frequently (e.g. annually) while larger or more highly leveraged funds would file more frequently (e.g. quarterly).

Question 3

Is this an appropriate metric to use as part of this two-step framework? Does it provide any information that is not provided by the other potential step 1 metrics discussed below?

A GNE report effectively reports the maximum size of the portfolio but does not give an indication of the purposes for which leverage is used. Measuring GNE by instrument type could provide information as to the type of derivatives being used by a given fund and could provide an indication of the potential risk factors that could influence the fund's overall risk. Accordingly, as previously noted we believe that it is beneficial to report GNE on an asset class by asset class basis.

Adjusted GNE and NNE are progressively more focused on market risk; if the 'raw' GNE is substantially different from these measures it may indicate more complex derivative use and the need for further due diligence on the implementation of a fund's investment objective and its operational processes.

Questions on Adjusted GNE

Question 4

Do respondents agree with the discussion above concerning the information that can be provided by this metric as well as its limitations?

In principle, adjusted GNE is a means of normalizing GNE across certain asset classes, where the use of GNE particularly overstates potential risk – such as in the case of interest rate derivatives. While we can see certain incremental benefit in terms of smoothing out the effects of using interest rate derivatives by reducing overstated headline GNE figures, overall this measure provides little additional information to GNE reported by asset class especially as adjusted GNE will still overstate economic exposure from derivatives. On a technical basis we agree with the adjustments for interest rate derivatives (10-year equivalents) and delta-adjusted notional value for options. We would also recommend the netting of derivatives with identical underliers, e.g. FX forwards long and short the same currency as these offsetting positions result in no economic exposure.

As we have noted in the past, we caution that reviewing aggregate GNE figures provides little information as to the risks to which a fund's use of derivatives is associated. That said, were IOSCO going to rely on aggregate GNE figures to compare funds, aggregate adjusted GNE is clearly a better measure than aggregate GNE. In practice, however, we believe there are only marginal benefit in retooling existing reporting templates especially if GNE is reported on an asset class by asset class basis and combined with NNE-style approaches such as the EU's commitment approach for UCITS and AIFMD. We believe there will also be a number of significant challenges in implementing this methodology in a consistent way across IOSCO member jurisdictions, given the framework of existing reporting templates.

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Question 5

Do respondents agree with the proposed adjustments of the gross notional exposure? To what extent would these adjustments provide improvements to the listed metrics and address the concern that metrics based on gross market exposure could overstate a fund's market exposure? Would respondents favour further adjustments and if so which one(s)? For example, should a measure of adjusted gross notional exposure consider adjusting a derivative's notional amount based on the volatility of the underlying reference asset? If so, what would be an appropriate measure of volatility? What other adjustments would be appropriate and why?

From a conceptual perspective, the use of delta-adjustment and 10-year equivalents moves the leverage measure closer to becoming a measure of market risk. It is consistent with this approach to exclude exactly matching buy/sell positions with the same counterparty for OTCs (see Question 15). NNE would allow netting across counterparties, where other transaction details match. As noted above, however, we do not see the practical added-value of implementing an adjusted GNE approach within existing reporting frameworks which already cater for netting.

Question 6

With respect to the duration adjustment, do respondents agree that it would be appropriate to express interest rate derivatives as ten-year bond equivalents? Would respondents favour adjusting the fund's interest rate derivatives relative to its target duration rather than a ten-year bond equivalent? If the "10-year-bond equivalent" approach were preferred, which reference bond(s) should be used depending on market? If the "fund's target duration" were preferred, what should be done with the funds that have no target duration? Are there alternative approaches that should be considered? Which ones and why?

If the goal of the leverage metric is to describe market exposure in a comparable sense across funds, then 10-year equivalents meets this need better than allowing for the use of a mix of 10-year equivalents and target durations.

Question 7

Are there any funds that could be missed as a result of an analysis using adjusted gross notional exposure metrics but may warrant further regulatory attention? For example, a fund that invests significantly in investments with embedded leverage (e.g., an inverse floating rate note) may have a low gross notional exposure while nonetheless having highly volatile returns. As another example, if options are delta adjusted, would this raise the concern that a deeply out-of-the money option (with a corresponding low delta) could be given a very low adjusted gross notional exposure value but could represent a significant risk? If respondents agree with this risk, how could it be mitigated?

Leverage calculations for structured products can be complex, however there is already thorough analysis of how they might be reasonably treated in the CESR Guidelines on Risk Measurement and the Calculation of Global Exposure and Counterparty Risk for UCITS⁹. It may also be beneficial for consistency to apply delta adjustment and 10-year equivalent scaling to options on futures and options on swaps (Swaptions).

⁹ https://www.esma.europa.eu/sites/default/files/library/2015/11/10_108.pdf

Questions on NNE

Question 8

Do respondents agree that information about a fund's net exposure, when used in conjunction with metrics based on gross market exposure, may provide additional information about a fund's potential leverage? Please elaborate.

Comprehensive measures of leverage should take into account that derivatives used for hedging do not create leverage and allow for netting of offsetting positions. In principle, combining exposure measured on a net basis combined with the simple gross exposure on asset class basis is an appropriate way to filter potential leverage-related risk in an international leverage reporting framework. To this end, the proposed NNE measure most closely approaches this standard (though it has certain important limitations). That said, we do not believe that NNE provides much incremental value over and above certain existing reporting standards, such as the AIFMD or UCITS "commitment approaches". IOSCO should clarify that the "commitment approach" is sufficiently similar to NNE so as not to require additional reporting standards for those funds already complying with AIFMD or UCITS methodologies.

It is also important to be clear on the regulatory purposes for which NNE will be used to ensure that market participants are reporting measures which are used by national regulators as part of their supervisory monitoring program. This highlights the benefits of combining different measures of leverage such as GNE, split by asset classes and showing long/short positions. This in of itself will highlight asset classes where leverage is more prevalent such as interest rates derivatives.

Where a fund's NNE is very different from its GNE, there is a strong indication that more complex investment and hedging strategies are being pursued and that further due diligence may be required. For example, the market exposure of a long-short fund is very different in form from that of taking directional positions with the same GNE

If NNE is to be adopted we support the first option proposed by IOSCO on page 8 of the consultation paper. A simpler approach is preferable to allow for greater comparability across funds and jurisdictions. The first option is limited to taking into account netting, which is preferable to the more complex and less easily comparable and more subjective second option requiring the taking into account of hedging as well. If hedging is to be permitted then we underline the importance of putting rules in place which are as concrete as possible to avoid developing a wider range of inconsistent approaches which will in turn undermine the comparability of different national measures.

Question 9

To what extent should netting assumptions be considered to ensure that netting conventions applied may not impair consistent calculation of one fund's net exposure to another and from one jurisdiction to the other? We invite respondents to comment on the approach set forth in Appendix A.

We agree that duration adjustment is a first-order approximation but note that it is difficult to obtain a perfect yet scalable interpretation and implementation of duration netting. On balance we believe that existing methodologies (e.g. the AIFMD or UCITS commitment approaches) even though they may have shortcomings still provide a useful tool to qualify the use of leverage in a fund. The maturity bucket-based approach to netting i.e.

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the arbitrary setting of bucket boundaries can result in non-linear reporting of leverage depending on whether the two legs of a trade span a bucket boundary or not.

Question 10

Do respondents agree with the proposed conditions of currency hedging arrangements?

The requirement to report leverage on non-base currency legs of an FX trade, as required for UCITS, can result in NNE reported by a fund being outsized relative to its market exposure. The proposed currency hedging methodology does not necessarily take into account the effect of currency trading practices. We illustrate this with a practical example:

To minimize trading costs, it is common practice to trade 'minor' currencies by trading back-to-back through a 'major' currency. For example, if a GBP-denominated fund wishes to gain exposure to Mexico, two FX trades would typically be executed

- GBP / USD
- USD / MXN

The USD exposure in the two trades will be exactly equal in size but on opposite sides of the trade. Under some approaches this can result in 3x leverage being reported, while the net non-base currency exposure is 1x. If this exposure was gained to hedge a Peso-denominated asset, there should, from an economic exposure perspective, be zero NNE reported for these two FX trades.

In practice, there are many operational requirements such as the need to tag the trade in the example as related/hedging trades to ensure that genuine currency trades are not inadvertently caught which may be difficult to operationalize on a consistent basis.

Question 11

Are there any funds that may warrant further regulatory attention but that could be missed as a result of an analysis using NNE based on the approach proposed in Appendix A?

We do not believe this would be the case from our experience of using EU calculation methodologies.

Question 12

Would information that serves as a proxy for potential offsetting relationships be informative when evaluating a fund's potential leverage? How comparable would these proxies be across jurisdictions? Do respondents believe the examples discussed above would be informative? Are there other proxies that would be informative?

No comment.

Questions on GNE, Adjusted GNE or NNE

Question 13

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GNE represents the gross market exposure of a fund which is calculated by summing the absolutes values of the notional amounts of a fund's derivatives by asset class plus the value of the fund's other investments by asset class, as noted above. Should cash and cash equivalents be included in the calculation of exposure, or not? Please explain.

Our preference would be to exclude base currency cash and cash equivalents until the proceeds are re-invested to only include economic exposures in the leverage calculation following the AIFMD approach. Non-base currency cash carries currency and interest rate risk and therefore market exposure and should therefore be included in the calculation. This leads to a base assumption that a fully invested unlevered fund should have a GNE of 1x (or 100%).

Question 14

Should the greater of the cash borrowed and the current value of the assets purchased with the borrowings be retained when calculating the metrics or should it consider, once cash is reinvested that the value of the corresponding investment should be used? In some jurisdictions, regulatory calculations include the greater of the amount of cash borrowed or the value of the investments purchased with the borrowing. For example, if a fund borrows \$100 and invests all of it in securities that later decline in value to \$50, under this approach the calculation would include the greater amount of the cash borrowing, rather than the value of the security. Please elaborate.

The gross value of borrowings should be reported alongside, but separate to GNE to reflect the fact that they represent a different liquidity and funding risk for the fund. In some cases, it is readily apparent which asset was purchased using borrowed funds however, in many cases this is not at all straightforward e.g. if cash is borrowed, via repo, in order to maintain a positive cash balance after variation margin calls have been met, there is not always a clearly identified asset to which the value of the borrowing can be compared.

We believe that where funds make extensive use of borrowings, the interpretation of GNE would be improved if:

- unencumbered cash on hand is excluded from GNE as should initial margin posted/received to/from counterparties
- all physical assets held (whether long or short or whether using borrowed cash or not), should be included at their market value.

We are also aware that many regulators wish to understand whether funds have sufficient liquid assets to meet calls for margin or collateral and whether funds can rehypothecate or reuse assets posted or set aside as collateral for their derivatives transactions. In a number of jurisdictions, specific fund structures such as regulated funds are subject to specific rules on collateral management which may prohibit reuse or set out conditions on how collateral is invested. We believe that national regulators will need to take all these characteristics into account as part of their Step 2 risk assessment. Many funds already provide detailed reporting of their inventories (including liquid assets) to national supervisors which could assist this process thereby avoiding the need to build out significant new reporting tools.

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Question 15

GNE and adjusted GNE discussed above, are both presented on a gross basis, that is, the metrics represent the sum of the absolute values of long and short positions and by asset class, without any netting or hedging. Where positions are closed out with the same counterparty and result in no credit or market exposure to the fund, should they be excluded from these metrics? This would be consistent with data reporting on the SEC's Form PF, for which advisers do not include these closed-out trades when reporting the aggregate value of all derivatives positions. For example, if a fund enters into a future contract to sell a given commodity, and then enters into a contract to buy the same commodity for the same delivery month on the same futures exchange in order to eliminate the fund's exposure under both contracts, should the metrics exclude those contracts' notional amounts from any exposure figure?

In responding to this question, we note that while in both cases there is no market risk, in the case of the futures position, no further action is required of the fund. In the case of OTC trades, until they mature or are terminated, periodic cashflows must be made by each party. Large, un-collapsed, OTC derivatives books present their own risks and it may be useful to regulators if the leverage measure made their presence visible. One approach might be to only allow netting of OTC trades as opposed to futures which would be in line with the use of delta-adjustment and 10-year equivalents, as a measure of market risk.

More specifically we are in favor of allowing netting with the same counterparties and settlement date. An example which we often encounter is that of FX Forwards. Where a fund hedges currency exposure, and subsequently suffers a redemption, the gross leverage of the fund will spike until settlement date as the portfolio manager closes out some of the hedging FX forwards. During this time, so long as the same counterparty was used for both the original and closing FX forward, there is no market or counterparty risk, yet on reported leverage is increased by a function of closing FX forwards and decrease in NAV as a result of the redemption.

Presentation of GNE, Adjusted GNE or NNE by asset class

Question 16

Would notional exposure metrics allocated across asset classes allow for more effective step 1 screening for leverage and leverage-related risks than aggregating a fund's exposure into a single figure? That is to say, would this approach more effectively achieve the goal of step 1—efficiently excluding from consideration funds that are unlikely to pose significant leverage-related risks and which thus do not warrant further analysis? Do respondents further believe that the additional inclusion of a “total” aggregated number could be of interest under the proposed approach? Please elaborate.

As mentioned above we would support this approach for GNE reporting as it allows for a more nuanced interpretation of the headline leverage number. We do not, however, see the benefit of asset for asset class allocation for additional measures such as for adjusted GNE and NNE. Neither do we see the benefit of including a total aggregated number as taken in isolation this is a misleading figure.

Asset class by asset class reporting of derivatives also raises several definitional issues. We illustrate this with two examples:

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- Firstly, the treatment of TBAs which can be treated as “forward settling instruments” for accessing specific markets such as the US mortgage market. Other jurisdictions take the view that these instruments should be characterized as derivatives.
- Secondly, the treatment of covered calls which are subject to inconsistent regulatory approaches. We have seen jurisdictions allowing these instruments to be netted out, whereas others require them to be specifically included in leverage calculations.

It would be beneficial for IOSCO members to agree a common approach for the purposes of reporting on a globally consistent basis.

Question 17

How granular should the split of asset classes be? Would the more granular presentations in Form PF and AIFMD requirements, for example, be most informative? Should the answer depend on the type of fund or regulations that apply to the fund’s use of leverage (i.e., more granularity where the regulatory scheme permits greater leverage)? Would allocating exposure across major asset classes such as equities, commodities, credit, interest rates, or currencies, provide sufficient information?

We would support this approach of breaking down leverage by asset class and by currency. Most ‘markets’ are asset class/currency specific, and it is possible for relatively modest positions from a global perspective to be large from a local perspective. We believe that AIFMD/Form PF reporting could be adapted without significant cost to support this approach.

For example, the high-level breakdowns from question B8 in AIFMD Annex IV reporting are likely to be sufficient in this case. In the UK, the FCA, for example, has an annual derivative report which may be a useful template for identifying a breakdown. It also allows free form text to identify instruments which do not easily fit the prescribed fields

Question 18

Would it be helpful to examine other details that could supplement the allocation of a fund’s exposure by asset class - for example, identifying the types of derivatives instruments in which a fund invests? Different derivatives instruments can have different risks associated with them, such as different counterparty risk, or a linear risk profile (e.g. futures) versus a non-linear risk profile (e.g., options). A fund’s allocation of exposure across asset classes also could include the relevant counterparty, or those counterparties to which the fund has significant exposure. Would this information be useful in evaluating potential impacts of a dealer or central counterparty coming under market stress? Do respondents think that such additional data points would provide useful information, taking into account allocation of exposure across asset classes? What other data points might be helpful in this regard?

On counterparty exposure, supervisory concerns appear to relate to the extent to which systemically important (or other large banking institutions) may have significant counterparty exposures to a given fund. This reflects concerns that the inability of a fund to meet its obligations to a given counterparty could contribute to systemic risk, if the counterparty exposure presented by the fund was significant enough that its inability to meet obligations could cause distress at the counterparty.

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We believe that analyzing counterparty risk in this form should be performed (and already is performed) by the banks themselves, as this is the responsibility of banks' counterparty risk management procedures. This takes into account that the economic relationship between market agents is very much dependent upon the legal framework and agreements in place between them. However, if securities regulators would like to monitor counterparty exposures of funds, we believe counterparty exposure should be reported separately from leverage and should begin by collecting information on each fund's largest counterparty exposures and the value of those exposures. Indeed, many regulatory reporting regimes already collect such information, as shown in Exhibit 1.

Exhibit 1: Regulatory Reporting Regimes and Largest Counterparties

UCITS (LUX)	AIFMD Annex IV (EU)	Form PF (US)
<p><i>Section VI - Counterparty risk and collateral in relation to EPM techniques / OTC financial derivative instruments and traded derivatives (where appropriate)</i></p> <p>Positive net counterparty exposure at semester-end (<u>top 3 counterparties</u>)</p> <p>Negative net counterparty exposure at semester end (<u>top 3 counterparties</u>)</p>	<p><i>24(2)C, Item 159:</i></p> <p>Identify the <u>top 5 counterparties</u> to which the AIF has the greatest mark to-market net counterparty exposure, measured as a % of the NAV of the AIF.</p> <p>Identify the <u>top five counterparties</u> that have the greatest mark-to-market net counterparty credit exposure to the AIF, measured as a percentage of the NAV of the AIF.</p>	<p><i>Question 22</i></p> <p>Identify the <u>five counterparties</u> to which the reporting fund has the greatest mark-to-market net counterparty credit exposure, measured as a percentage of the reporting fund's net asset value.</p> <p><i>Question 23</i></p> <p>Identify the <u>five counterparties</u> that have the greatest mark-to-market net counterparty credit exposure to the reporting fund, measured in U.S. dollars.</p>
<p><i>These calculations include collateral.</i></p>	<p><i>These calculations include collateral and bonds/equity held that have been issued by the counterparty.</i></p>	<p><i>These calculations exclude collateral. However, Questions 43 and 45 request detailed information about collateral posted by Qualified Hedge Funds.</i></p>

As shown above, while the questions in each reporting template are similar, there are slight differences in the calculation methodologies, notably with respect to the inclusion/exclusion of collateral.

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Questions on supplementary data points

Question 19

Would these data points supplement step 1 metrics in a relevant manner? Do respondents believe that certain of these supplementary data points should be given more or less weight than others? Which ones and why?

We question the need to include additional data points as a measure of leverage at Step 1. Except as previously commented (e.g. the data points on fund portfolio composition) the supplementary data points tend to be points that would be used to assess risk rather than a measure of leverage. As such they should be used as part of a Step 2 risk assessment. Indeed, many of these fields are already collected in the AIFMD Annex IV or in Form PF.

At Step 2 we support the collection of additional risk-based measures, such as VaR. Using a risk-based measure like VaR alongside leverage is important when assessing the riskiness of a fund's use of derivatives and leverage. This is particularly important because standalone leverage metrics could potentially misstate a fund's true economic exposure and overall risk, particularly if the leverage measure is not well-suited to the fund's investment strategy. Recognizing that funds use derivatives to achieve investment objectives, align portfolio risks to benchmark risks, or to reduce overall risk, we recommend tailoring such risk-based measures according to the different ways in which a fund uses derivatives – which may include measuring both absolute risk and risk relative to a benchmark. For example, there will be some funds that come up as levered under the proposed Step 1 measures that are lower risk than most long only portfolios, such as low beta strategies - i.e., long/short equity, managed volatility, LDI. It is essential that securities regulators look in detail at the underlying strategies before making further assumptions about the potential risks that these types of funds may present.

Use of VaR

When assessing the risk of a fund's overall use of derivatives and leverage it is important to use measure like VaR alongside leverage measures, particularly since a standalone leverage metric could misstate a fund's true economic exposure and overall risk.

VaR is a measure of downside risk that seeks to quantify a maximum potential loss at a given confidence level. While VaR is not a measure of leverage – rather it is a measure of overall portfolio risk – VaR is important to understanding the amount of risk that leverage may be introducing into a portfolio. Most existing regulatory reporting regimes request data on VaR, as shown in Exhibit 2. However, there is inconsistency in the specifications of VaR in various reporting regimes. Further, there is skepticism with respect to using VaR as a regulatory measure given that it can be calculated using different methods (e.g., parametric, historical, Monte Carlo), and the result can differ based on the models and assumptions used. We recommend a focus on standardizing the approach to collecting data on VaR, as we believe these concerns can be mitigated by the use of common parameters and back-testing, to provide baseline for the model being used to calculate VaR, recognizing that there may be legitimate reasons for using different VaR models. For example, when UCITS utilize the VaR method, they must provide results of back-testing assessments that denotes how many overshoots occurred over a 250 day period, as well as the amount of the overshoot in excess of

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VaR.¹⁰ Similarly, in September 2016, the ICI submitted a letter to the SEC highlighting recommendations for ensuring that VaR models are applied consistently for regulatory purposes. These recommendations included:

- Common parameters for VaR estimation: same time period and same confidence level
- VaR backtesting and validation: Backtesting VaR models with actual return data
- Recordkeeping and reporting: Retaining records and reporting backtest results to regulators

Exhibit 2: Regulatory Reporting Regimes and VaR

UCITS (LUX)	AIFMD Annex IV (EU)	Form PF (US)
<p><i>Section III – Global exposure and leverage</i></p> <p>Choice of Absolute or Relative VaR or commitment leverage*</p> <p><u>Absolute VaR</u> expressed in % of the total net assets, and determined on the basis of a 99% confidence interval and a holding period of 20 business days.¹¹</p> <p><u>Relative VaR</u>: VaR UCITS / VaR Reference Port. x 100</p> <p><u>Time periods</u>:</p> <ul style="list-style-type: none"> • End of semester • Min. during semester • Max. during semester • Avg. during semester 	<p><i>24(2)C, Item 302:</i></p> <p>VaR</p> <p>Requires AIFM to set out in narrative format how they calculate VaR</p> <p>VaR figures may be reported for some funds during their regular reporting cycle (quarterly, semiannually or annually).</p>	<p><i>Question 40(a)</i></p> <p>During the reporting period, did you regularly calculate the VaR of the reporting fund? [yes/no]</p> <p><i>Question 40(b)</i></p> <p>If you responded “yes” to Question 40(a), provide the following information.</p> <p>(i) Confidence interval used</p> <p>(ii) Time horizon used (# of days) (iii) What weighting method was used to calculate VaR? [None/Exponential/Other] (iv) If you responded “exponential”, provide the weighting factor used (v) What method was used to calculate VaR? [Historical / Monte Carlo / Parametric / Other] (vi) Historical lookback period used (vii) Time period: End of each month in quarter</p>

¹⁰ The UCITS Global Exposure guidelines provide information on how to convert the standard 99% 1 month limit into alternate parameters (e.g., a 95% 1 day limit). While the intention is to use 99% 1 month, funds may use alternate parameters

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<i>Only reported if fund uses VaR method</i>	<i>Choice of calculation method</i>	<i>Only reported VaR is calculated regularly</i>
<i>Choice of Absolute or Relative VaR</i>	<i>No confidence interval or time period specified</i>	<i>Choice of calculation method</i>
<i>Confidence interval and time period specified for absolute VaR</i>	<i>Only need to report one calculation</i>	<i>No confidence interval or time period specified</i>
		<i>If more than one VaR measure calculated, all calculations must be provided</i>

**UCITS have the ability to elect to use either: (i) the commitment approach, or (ii) a VaR approach – either relative VaR or absolute VaR.*

Stress testing. Stress testing is another means of assessing downside risk that is often used as a complement to VaR. Stress testing looks at various stress scenarios and assesses potential losses that could arise from such scenarios. To be clear, stress testing in this context is different than liquidity stress testing, as this type of stress testing relates to the mark-to-market losses a portfolio could experience during a period of market volatility, rather than on a fund's ability to meet its redemption obligations. Stress testing addresses a valid criticism of VaR in that VaR may not provide reliable insight as to the magnitude of potential losses in the tail of the distribution.

There are several instances of stress tests included in existing regulatory reporting regimes. Exhibit 3 provides an overview of stress testing data in existing regulatory reporting regimes, which highlights there is substantial variation with respect to reporting of stress testing results. That said, arguably, some variation is appropriate with respect to stress testing to ensure that stress scenarios reflect the fund's investment strategy, the assets it invests in, and the fund's structure.

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Exhibit 3: Regulatory Reporting Regimes and Stress Testing

UCITS (LUX)	AIFMD Annex IV (EU)	Form PF (US)
<p><i>Section IV – Stress testing and other risk indicators</i></p> <ul style="list-style-type: none"> • Stock markets: +/- 30% • IR curves: Parallel shift +200 bps • Credit spreads: proportional shift - 50% / +100% • FX: base currency vs. other currencies <p>Information on 3 most relevant stress scenarios comprising a short description of the scenarios, corresponding results at semester end and holding period (expressed in number of days). Please note that the most relevant stress scenarios are not necessarily those which exhibit the worst results but scenarios the management companies / investment companies consider the most adequate with reference to the investment policy, risk profile, market conditions or assets class.</p>	<p><i>24(2)C, Item 279:</i></p> <p>Please provide the results of the stress tests performed in accordance with point (b) of Article 15(3) of Directive 2011/61/EU [risks associated with each investment position of the AIF and their overall effect on the AIF's portfolio can be properly identified, measured, managed and monitored on an ongoing basis, including through the use of appropriate stress testing procedures]</p>	<p><i>Question 42</i></p> <p>For each of the market factors identified below, determine the effect of the specified changes on the reporting fund's portfolio and provide the results.</p> <p>(You may omit a response to any market factor that you do not regularly consider in formal testing in connection with the reporting fund's risk management.)</p> <p>Report effect on long and short components of portfolio (as % of NAV) separately:</p> <ul style="list-style-type: none"> • Equity prices: +/-5%; +/-20% • Risk-free rates: +/-25 bps; +/-75 bps • Credit spreads: +/-50 bps; +/-250 bps • Currency rates: +/-5%; +/-2% • Commodity prices: +/-10%; +/-40% • Option implied volatilities: +/-4%; +/-10% • Default rates (ABS): +/-1%; +/-5%

Assessment of leverage-related risks. We recommend that the IOSCO and its members develop further the framework for assessing leveraged-related risks they are specifically concerned by (e.g., counterparty risk, risk of market losses to investors, etc.) which may potentially have a global or systemic impact. This work should consider whether this data is already captured elsewhere in other sectoral reporting frameworks (e.g. reporting relating to the use of derivatives and securities financing transactions (e.g. under EMIR and SFTR in the EU) or the oversight of CCPs and broker dealers who sit on the other side of transactions with investment funds). This may lead to the conclusion that further study will then be needed to fully understand the interaction between leverage and various forms of risk in different types of investment strategies.

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Question 20

Are there other useful data points that would supplement step 1 metrics? Do respondents consider these or other data points as part of their leverage risk management? If so, which ones and how do respondents use them?

For some funds the use of cash borrowing, often via repo, and the associated funding risk is an important aspect of leverage. For such funds collecting the use of repo may be beneficial.

Questions on step 1

Question 21

a) Should we consider other metrics than the one consulted on? If so, which one(s) and why?

b) What's your view of the metrics detailed in appendix B?

Stress testing is an important fund risk management tool, however, even when the scenarios are specific by regulators many modelling assumptions are required to implement them – please see our comments on Question 19 in relation to stress testing. In particular, the 'worst loss' proposal in Appendix B, which caps losses on short positions on the maximum loss on the long side could have adverse impact on oversight of funds using complex option strategies with asymmetric payoffs.

Similarly, the calculation of 'delta' involves many modelling assumptions, unless regulators mandate the use of certain models. However, this also runs the risk of an inappropriate model being applied to some positions.

Question 22

Do respondents agree that none of the metrics analysed can alone provide an accurate measure of leverage of a given fund or a group of funds? Would a combination of the suggested metrics or one of such metrics with supplementary data point suffice to meaningfully monitor leverage and identify funds that may need further risk assessment regardless of the market conditions? Please elaborate.

Given the heterogeneous nature of funds and strategies we agree none of the metrics analyzed can alone provide an accurate measure of leverage of a given fund or a group of funds.

The Step 1 measures are fund specific and it could well be that a group of funds, for example with a common regulator, may have net-zero leverage in a given market or, conversely, their directional positioning could be perfectly aligned e.g. LDI mandates. Any assessment of whether a group of funds' positions are aligned in some way is best accomplished at Step 2 by looking at their combined market-risk exposure e.g. DV01 or CS01, rather than any of the leverage metrics presented.

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Question 23

What are the challenges associated with the collection of data for each metric and/or of the supplementary data points suggested? Is the information readily available?

In general, the more sophisticated the risk measures required the lower the degree of comparability across funds will be, unless all jurisdictions agree to specify the same calculation methodology and their implementations are independently validated e.g. by mandating use of the tables in Appendix C of the Report.

The calculation of NNE could be challenging where it has not previously been collected or where the methodology differs from existing measures such as the EU's commitment methodologies.

Question 24

Are there other approaches, rather than the two-step framework and alternatives identified above, that respondents believe we should consider? If so, what are these approaches and what are their advantages and limitations?

We underline the importance of clarifying that the vast majority funds which move into Step 2 analysis are unlikely to present systemic risk. Any assessment of systemic risk should only be made once a full risk assessment has been made under Step 2.

Question 25

Is there one or more step 1 metrics, or specific supplementary data points, or both, that may be effective in facilitating a cross-border regulatory dialogue if collected across jurisdictions? If so, which metrics and/or data points and why?

No comment.

Question 26

Do respondents believe that step 2 effectively reflects the inherent limitations in step 1 measures by recognising that, in step 2, regulators seeking to identify leverage-related risks may need to perform risk-based analyses that move beyond step 1 metrics? Why or why not?

We agree with this approach. We believe that rather than mandating a complex methodology IOSCO could provide further guidance to its members in how to undertake risk-based analysis on funds identified for Step 2 scrutiny

Question 27

What types of more tailored or bespoke analyses do respondents believe would be most effective in step 2? Are there analyses that respondents perform, or data points that respondents consider, as part of their leverage risk management that they believe regulators should consider as potential step 2 approaches? Which ones and why?

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The approach at step 2 needs to be fund-specific, the risk profile of a long/short equity fund is very different from that of a property fund and any follow-up analysis will need to be aware of the asset class and investment process used by each fund.

Conclusion

We appreciate the opportunity to address and comment on the issues raised by the Report and will continue to work with IOSCO on any specific issues which may arise out of our response.